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Market Forces and the Defense Acquisition Marketplace

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14. ABSTRACT

Market forces exist in the defense acquisition marketplace as they do in any functioning market. The form of those forces is not necessarily identical to what is found in an open commercial market. The U.S. Department of Defense is not out to make a profit, and those who pay for defense are not consumers. All citizens are beneficiaries of a successful defense organization whether they pay taxes or not. However, companies that provide products and services for defense are participants in the defense acquisition marketplace. Understanding what market forces impact the buyer and the sellers is important to using those forces to improve buying power. Market forces work within the constraints of the marketplace design. That design may evolve from local practices and informal rules or from more formal rules, regulations, and enforcement mechanics. The defense marketplace design is dictated by public law regulation, military directives, and acquisition practice. It is unlikely that the acquisition marketplace design will change very quickly, even in the face of current and potential budget cuts. On the other hand, acquisition practice that takes advantage of market forces present in the acquisition marketplace that work well within the marketplace design can be quickly implemented. This paper discusses the design and the market forces associated with defense acquisition and attempts to point out practices to use those market forces to improve the value proposition in defense acquisition for all parties. Better buying power is not just about spending less; it is about spending less for better quality, quantity, and capability by eliminating non-value added work and using market forces to get to should-cost prices.

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Preface & Acknowledgements

Welcome to our Ninth Annual Acquisition Research Symposium! This event is the highlight of the year for the Acquisition Research Program (ARP) here at the Naval Postgraduate School (NPS) because it showcases the findings of recently completed research projects—and that research activity has been prolific! Since the ARP's founding in 2003, over 800 original research reports have been added to the acquisition body of knowledge. We continue to add to that library, located online at www.acquisitionresearch.net, at a rate of roughly 140 reports per year. This activity has engaged researchers at over 60 universities and other institutions, greatly enhancing the diversity of thought brought to bear on the business activities of the DoD.

We generate this level of activity in three ways. First, we solicit research topics from academia and other institutions through an annual Broad Agency Announcement, sponsored by the USD(AT&L). Second, we issue an annual internal call for proposals to seek NPS faculty research supporting the interests of our program sponsors. Finally, we serve as a "broker" to market specific research topics identified by our sponsors to NPS graduate students. This three-pronged approach provides for a rich and broad diversity of scholarly rigor mixed with a good blend of practitioner experience in the field of acquisition. We are grateful to those of you who have contributed to our research program in the past and hope this symposium will spark even more participation.

We encourage you to be active participants at the symposium. Indeed, active participation has been the hallmark of previous symposia. We purposely limit attendance to 350 people to encourage just that. In addition, this forum is unique in its effort to bring scholars and practitioners together around acquisition research that is both relevant in application and rigorous in method. Seldom will you get the opportunity to interact with so many top DoD acquisition officials and acquisition researchers. We encourage dialogue both in the formal panel sessions and in the many opportunities we make available at meals, breaks, and the day-ending socials. Many of our researchers use these occasions to establish new teaming arrangements for future research work. In the words of one senior government official, "I would not miss this symposium for the world as it is the best forum I've found for catching up on acquisition issues and learning from the great presenters."

We expect affordability to be a major focus at this year's event. It is a central tenet of the DoD's Better Buying Power initiatives, and budget projections indicate it will continue to be important as the nation works its way out of the recession. This suggests that research with a focus on affordability will be of great interest to the DoD leadership in the year to come. Whether you're a practitioner or scholar, we invite you to participate in that research.

We gratefully acknowledge the ongoing support and leadership of our sponsors, whose foresight and vision have assured the continuing success of the ARP:

- Office of the Under Secretary of Defense (Acquisition, Technology, & Logistics)
- Director, Acquisition Career Management, ASN (RD&A)
- Program Executive Officer, SHIPS
- Commander, Naval Sea Systems Command
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- Program Executive Officer, Littoral Combat Ships

We also thank the Naval Postgraduate School Foundation and acknowledge its generous contributions in support of this symposium.

James B. Greene Jr.
Rear Admiral, U.S. Navy (Ret.)

Keith F. Snider, PhD
Associate Professor

Panel 17. Enabling an Open Architecture Environment

Thursday, May 17, 2012	
11:15 a.m. – 12:45 p.m.	**Chair: RADM James D. Syring,** USN, Program Executive Officer for Integrated Warfare Systems ***Competition and the DoD Marketplace*** Nickolas H. Guertin and Brian Womble *Deputy Assistant Secretary of the Navy for Research, Development, Test, and Evaluation* ***Historical Analysis of Costs, Risks, and Uncertainties: Moving From a Proprietary to an Open Architected Systems, Open Business Acquisitions Management Approach*** Tom Housel, Scott Cole, and Russel Wolff *Naval Postgraduate School* ***Market Forces and the Defense Acquisition Marketplace*** William Schmidt, *ANGLE Inc.*

James D. Syring—Rear Admiral Syring graduated from the United States Naval Academy in 1985 with a Bachelor of Science degree in marine engineering and was commissioned as an engineering duty officer. He completed his Master of Science degree in mechanical engineering from the Naval Postgraduate School in 1992. Syring is also a graduate of the Defense Systems Management College and a member of the Acquisition Professional Community.

Syring received his surface warfare officer qualification on board the USS *Downes* (FF 1070) where he served as auxiliaries and electrical officer and subsequently as electronics material officer. His engineering duty officer tours include ship superintendent for the USS *Port Royal* (CG 73) and Aegis test officer for new construction DDG 51 class ships on the staff of the supervisor of shipbuilding, Pascagoula, 1992–1996; combat systems, test and trials officer in the DDG 51 Aegis Shipbuilding Program Office (PMS 400D), 1996–1999; and combat systems baseline manager at the Aegis Technical Division, responsible for new construction Aegis baseline computer program development, 1999–2001. Syring served as director for surface combatants, Office of the Assistant Secretary of the Navy (Research, Development, and Acquisition), where he advised the secretary on all acquisition matters related to CG 47, DDG 51, DDG 1000, and LCS class ships from 2001 until 2003. His next assignment was as the technical director for the DDG 1000 Shipbuilding Program, serving in that capacity until 2005.

Most recently, Syring served as program manager for the U.S. Navy's DDG 1000 Program (2005–2010). As program manager, he was responsible for total ship systems engineering and acquisition of DDG 1000 and associated technologies, including integrated power systems, dual band radar, and the advanced gun system. Syring currently serves as the program executive officer for Integrated Warfare Systems (PEO IWS).

Syring's personal awards include the Legion of Merit (two awards), the Meritorious Service Medal (four awards), Navy Commendation Medal, and Navy Achievement Medal.

Market Forces and the Defense Acquisition Marketplace

William Schmidt—Mr. Schmidt is a founder and CEO of ANGLE Incorporated, a veteran-owned small business located in Springfield, VA. He is a retired Navy commander with 20 years of active service as a surface warfare officer and an engineering duty officer. His engineering duty officer tours included working as a scientific officer at the Office of Naval Research and as the combat systems, test and trials branch head for the AEGIS Destroyer Program Office. At ANGLE Mr. Schmidt has worked closely with Navy and Marine Corps acquisition programs, including the AEGIS Destroyer program and the Expeditionary Fighting Vehicle program, providing technical and engineering management support in area of survivability, configuration management, and information technology tools and processes. Mr. Schmidt worked closely with the Navy lead for Open Systems Architecture as lead for ANGLE support to the PEO IWS 7 Open Architecture program from 2005 through January 2012.

Abstract

Market forces exist in the defense acquisition marketplace as they do in any functioning market. The form of those forces is not necessarily identical to what is found in an open commercial market. The U.S. Department of Defense is not out to make a profit, and those who pay for defense are not consumers. All citizens are beneficiaries of a successful defense organization whether they pay taxes or not. However, companies that provide products and services for defense are participants in the defense acquisition marketplace. Understanding what market forces impact the buyer and the sellers is important to using those forces to improve buying power.

Market forces work within the constraints of the marketplace design. That design may evolve from local practices and informal rules or from more formal rules, regulations, and enforcement mechanics. The defense marketplace design is dictated by public law, regulation, military directives, and acquisition practice. It is unlikely that the acquisition marketplace design will change very quickly, even in the face of current and potential budget cuts. On the other hand, acquisition practice that takes advantage of market forces present in the acquisition marketplace that work well within the marketplace design can be quickly implemented. This paper discusses the design and the market forces associated with defense acquisition and attempts to point out practices to use those market forces to improve the value proposition in defense acquisition for all parties. Better buying power is not just about spending less; it is about spending less for better quality, quantity, and capability by eliminating non-value added work and using market forces to get to should-cost prices.

Introduction

Every year, the United States Defense Department (DoD) spends over $500 billion on personnel, operating, and acquisition costs. Of the $500+ billion, $131.5 billion was spent on procurement in fiscal year 2011 (Office of the Under Secretary of Defense [Comptroller], 2012). The DoD is the single buyer, and DoD procurement policy should dominate the marketplace. And still, every year there are dozens of acquisitions that report overruns, schedule slippage, and technical shortfalls, and many contracts focused on engineering and management support are criticized as wasteful and inefficient. This would suggest that one or more conditions exist that make attracting and selecting competent suppliers problematic.

Our free enterprise economy depends on market forces to efficiently allocate resources, assign products value, and meet the needs of customers with sufficient products in a timely manner. Market forces operate within the defense marketplace as well, but they don't apparently work as well. Identifying the market forces that impact the defense marketplace and its relative strengths clarifies approaches to improving the efficiency of the marketplace in responding to DoD needs. A brief outline of the conditions necessary for a

market to function efficiently is a useful point of departure for exploring market forces in defense acquisition.

Markets need buyers and sellers. Markets come into existence because buyers and sellers exchange things of value.

Markets need information. Information enables the buyers and sellers to find each other and determine the fair exchange between them. When information movement is constrained, markets work inefficiently, if at all.

Markets need autonomy (players with the freedom to make decisions). When the power relationship between buyers and sellers is unequal within a transaction, then the transaction is not market driven. Both buyers and sellers must have the power to negotiate the transaction and reach a position of mutual benefit. They must have the power to refuse the transaction if they can't benefit from execution.

Markets need trust between participants. The participants must trust that the other party will faithfully complete the transaction, delivering goods, services, or payment as agreed. Trust may exist because of a prior relationship, community pressures, or governmental structures (contract law and courts). Even if these things exist, trust may be lost between two or more participants.

Markets need rules. Rules may be informal or formal, but they must be known to all participants (information). The upside of rules is that they facilitate market function. The downside is that they impose transaction costs. The more extensive and formal the set of rules, the more likely they are to overburden the market.

There are some obvious entries missing from this list. Among the missing are profit and competition. The opportunity for profit is a critical element in the creation of buyers and sellers. Competition, on the other hand, usually makes markets function better, but it isn't an essential element. Both profit and competition exist within the defense acquisition marketplace, but not necessarily in the same sense as in an open market. Every marketplace also comes with transaction costs, inefficiencies that are not under the control of the buyers or the sellers that introduce costs into the marketplace.

Defense Acquisition Marketplace Structure

McMillan (2002) classified all government transactions as nonmarket transactions. However, the defense acquisition marketplace has all the necessary elements to function. The form of each has direct impact on how well the market functions and how effectively market forces (supply, demand, competition, and profit) work to provide goods and services of sufficient quality and quantity at a fair and reasonable price.

Fundamental Considerations

It is critical to remember at the outset of any discourse on defense acquisition that national defense is a purely governmental function from which every citizen benefits regardless of his or her individual contribution. In time of war, citizens are usually happy to contribute their fair share in the form of taxes, even if they are not delighted with the concept of taxes in general. They are also focused on ensuring that the equipment and systems are the best available so that their people on the front lines will have the best opportunity to win and come home alive. In time of peace, the money spent on defense acquisition is investment in deterrence. Citizens are less happy to contribute their fair share when they don't feel threatened. They are more likely to suggest that last year's or last decade's model gun, tank, ship, airplane, communications system, missile system, or other military system

ought to be sufficient. The definition of sufficient quality, capability, and quantity often become very different from those adopted in time of war.

It is also important to note that the defense acquisition marketplace is a *monopsony*. That is there is a single buyer, the DoD. Although some may argue the existence of defense acquisition organizations in other countries provides more than a single buyer, the size of the U.S. defense budget is greater than the combined defense budgets of the next six largest defense spenders. Another characteristic of a monopsony is the single buyer is a dominating force wielding much greater power than any of the sellers. In the commercial world, a common example of a monopsony was in coal country, when the coal company was the only employer for the majority of the work force. The company town was created and the outcome was dramatically depressed wages and living conditions. In the defense business the buyer, the government, is constrained by the Federal Acquisition Regulation (FAR) and the Defense Federal Acquisition Regulation Supplements (DFARS).

Market Needs

Buyers and Sellers

Although there is only one buyer in the defense acquisition business, there are an abundant number of sellers. Because of the relative size of the U.S. defense budget compared to other nations, a large number of foreign defense firms have also entered the U.S. market either through acquisition of entities within the U.S. or by establishing subsidiaries in the U.S. The sellers are continuously in competition with one another and/or collaborating with one another to win contracts for large and small systems. Systems contracts provide long-term revenue streams for the winners and stable sources of supply for the buyer. The sellers form new teams with each other or other sellers to pursue new opportunities where they may compete against current teammates.

New sellers attempting to enter the defense acquisition marketplace face some significant barriers. First, they have to understand the rules of the marketplace as captured in the FAR and DFARS. Then they must understand the informal rules of the specific Service(s) and program(s) they are targeting. They must also develop an understanding of the language of the Service(s) and program(s). Long-standing defense suppliers continuously hire retiring defense acquisition community civilian and military personnel in part to maintain current Service- and program-specific knowledge.

Information Flow

The availability of information within the U.S. defense acquisition marketplace is highly variable. Security considerations, export restrictions, restrictions on the release of information to foreign nationals, and the existence of proprietary designs and software within production or developmental systems all impede the availability of information to potential sellers. Further restrictions result from the practical constraints of a request for proposal (RFP). Every bit of information cannot be incorporated into the specifications or the statement of work and other descriptions attached to an RFP. Bidders conferences and bidders questions help with filling in some of the information voids, but sellers are often reluctant to ask questions that may provide more information to their competitors. Aristotle Onassis was quoted as saying that good intelligence was extremely important to success (McMillan, 2002). Although the marketplace thrives on open information, a particular business thrives on important information that no one else knows!

Systems are often developed using research and development funding and concepts or ideas presented by sellers. The sellers in turn work diligently to incorporate their proprietary information, software, and designs into the systems. They incorporate the

proprietary information to shorten the development cycle, improve system performance, and reduce development cost. Once development is complete, the system becomes vendor-locked because the government cannot release the proprietary information to other qualified vendors for competition.

Efforts currently underway to shift to open systems architecture may significantly reduce this information constraint. One of the features of the open systems is the use of modular, loosely coupled, highly cohesive architectures. This approach allows the incorporation of modules with proprietary content but open interfaces that support integration with other proprietary or non-proprietary modules. Each of the modules provides functional performance that is fully described without revealing the proprietary information. Systems developed using this approach can use open competition for maintenance or further development based on the non-proprietary content. The proprietary modules can be reserved for the original developer(s), or new modules providing the same or superior performance of the same function can be substituted without impacting overall system performance or availability.

Autonomy

Autonomy within the defense acquisition marketplace depends heavily on the sector and the profile of the seller. For example, within the shipbuilding sector, there is only one yard capable of building and qualified to build nuclear-powered aircraft carriers. The Department of the Navy (DoN) can refuse to buy from the single vendor, but only if it either stops buying nuclear-powered aircraft carriers or is willing to develop an alternate source by investing heavily in another shipyard to develop the physical plant, processes and procedures, and qualified workforce essential in the nuclear power industry.

At the opposite end of the spectrum, the small businesses with only defense market products are completely reliant on the single buyer. Unless they are the sole producer of an essential product, they will have little autonomy in dealings with DoD customers. Dealings with small businesses are often shuffled off onto large businesses by inserting small business subcontracting goals into RFPs for large systems or services. The relative power arrangement is not improved by this approach; in fact, it is often exacerbated. Although DoD entities are tied to the FAR and DFARS when dealing with small businesses, teaming arrangements between large and small commercial entities are not.

In the commercial world, start-ups and small companies are known for their innovation and the impact they have on the marketplace. Defense acquisition has attempted to leverage the innovation found in small companies through the Small Business Innovative Research (SBIR) program. Authorized by Congress and funded through a tax on acquisition funds, the DoD and the Services have used the SBIR program to varying degrees and with varying degrees of success. Although innovative solutions and products are often discovered, only small percentages typically become part of funded acquisition programs. The barriers to adoption lay both in the cost to incorporate the technology in the larger product and in the resistance to accepting that anyone other than the major system prime contractor could have a better solution to any problem. The large prime may subsequently develop essentially identical solutions with sponsor acceptance and support.

Trust Between Participants

Markets can function without trust. Illegal drug trafficking is a multi-billion dollar business the works globally and locally with little if any trust between participants. On the other hand, the drug business works with brutal enforcement mechanisms at the lower echelons and strong financial incentives at the regional, national, and international levels.

Trust between a buyer and a seller in the defense acquisition business is critical to both parties. The penalty for untrustworthy but legal behavior on either side is a strained relationship overburdened with lawyers, voluminous contracts for simple transactions, and continuous audits and reviews that cost far more than the value of the product or service. In short, lack of trust imposes unsupportable transaction costs on the marketplace.

Within the DoD acquisition marketplace, the buyers and sellers can be trusted to do whatever they perceive is in their best interest. If the buyers believe that their program will benefit through full and open competition, they will work diligently to follow that path. If they believe that they will benefit by keeping a vendor of record they, will work diligently to keep that vendor. If vendors believe that they will benefit by incorporating proprietary information into their system design, they will work to do so while retaining restricted data rights. Sellers are not running charities, and buyers are not responsible for the health and welfare of their vendors beyond the requirements of the FAR and DFARS. This level of trust does not require that an adversarial relationship be established between buyer and sellers. It does require each party remain cognizant of the best interests of their market partner.

Market Rules

The defense acquisition marketplace is well equipped with both formal and informal rules. The formal rules include the FAR, DFARS, defense authorization acts, defense appropriations acts, DoD directives and instructions, military department directives and instructions, and organizational directives and instructions. Informal rules change over time to reflect the approach and procedures of acquisition organizations as they evolve from a new program through full scale production to sustainment to program shut-down. Informal rules can make a significant difference in the relationship between current or potential sellers and the buyer.

The formal rules and the associated enforcement mechanisms (the Defense Contract Audit Agency [DCAA], the Defense Contract Management Agency [DCMA], and the U.S. Court of Federal Claims) provide a solid foundation for trust between marketplace participants but entail a significant transaction cost burden. The buyer's contracting and legal organizations spend countless hours reviewing and revising every procurement action to ensure full compliance with the formal rules. In like fashion, large sellers keep their own legal and contract management staffs busy reviewing procurement requests from the buyer, crafting teaming and subcontracting documents for potential teammates, and reviewing and revising proposal documents to fully comply with the rules while winning business and making a profit. Businesses too small to afford the legal and contracting staffs try to limit their exposure to losses by farming out legal and contracts reviews to qualified consultants on an as-required basis.

The informal rules impose lower transaction costs, but they may result in very significant positive or negative impacts on trust between participants. This is where the caution that market participants can be trusted to do what is in their own best interests comes into play. It is critical that each participant understand the motivations of their actual or potential trading partner. When the buyer or the seller does something unexpected but allowable within the formal rules, trust is often irreparably damaged. An example is when a buyer chooses to extend the contract of one vendor while awaiting the completion of a new competition while choosing to let the contract of a second partner performing the same work lapse. On the seller side replacing key personnel unexpectedly with personnel not well known to the customer raises concerns. In a similar fashion, changing the deficiency correction procedure in a fashion that pushes customer sign-off to a point later in the cycle but within contract requirements often results in customers pushing for more information and visibility into the contractor's process. President Reagan famously said, "Trust but verify,"

referring to disarmament agreements with the then Soviet Union. With international treaties and formal rules that approach works well but with informal rules trust is based on expectation. Expectation must be based on understanding what your trading partner believes is in their best interest.

Defense Acquisition Market Forces

Market forces are things that directly impact product demand or impact the functioning of the marketplace to meet demand. Some markets, such as energy, are global. Commodity markets are usually global in nature. To the extent that the DoD uses commodities from a global marketplace, there are no defense–acquisition–specific market forces. The rest of the world drives the market; defense is simply a small bump in total demand. Defense specific goods and services don't have a global consumer base.

The demand for defense goods and services is based in public policy. The extent to which the public invests in the nation's armed forces for warfare or as deterrence to avoid warfare drives demand. Changes in public policy priorities push demand up or down or shift emphasis between warfare domains and services. This in turn drives money between paying for service men and women or changing the purchase mix of ships, tanks, airplanes, and armaments. In recent years, billions of dollars have been spent to reduce casualties. That may mean better armor, better battlefield medical care, or sending in robots to disarm bombs or deliver Hellfire missiles to a target thousands of miles from a ground-based pilot. Given that there is a demand for defense goods and services, what forces animate the marketplace response?

Buyers and sellers are both motivated by financial gain in the commercial marketplace. In the defense industry, the sellers are motivated by financial gain, but the buyer isn't in the business of making money; rather, the buyer is in the business of spending the people's money to fulfill its security goals.

Profit

There is no doubt that profit is the key market force for industry. Without profit, the seller would cease to exist. Without sufficient profit, industry would not continue to offer products to the defense sector. Northrup Grumman Corporation divested itself of its shipbuilding holdings (Newport News Shipbuilding, Avondale Shipyard, and Pascagoula) because they didn't align well with the company's financial objectives. Future projections didn't show a sufficient profit margin in comparison to other business opportunities (Drew, 2011).

The projected order book for both the Newport News and Pascagoula yards was in good shape. Newport News is the nation's only nuclear aircraft carrier construction yard and also has construction contracts for Virginia class attack submarines. Pascagoula is one of two yards with contracts to construct AEGIS-capable Arleigh Burke Class destroyers. It is also the only yard constructing LPD 17 Class LPDs and LHAs. Although Navy shipbuilding plans are often fluid, there is little to suggest that either yard will be short of business for the next few years.

Small firms are at least as sensitive to profit margins. Shifts in recent years to bundle multiple tasks into large indefinite quantity, indefinite delivery (IDIQ) contracts have pushed small firms into teaming with large firms to win small portions of large contracts. This approach simplifies the government's work by pushing the administration of smaller tasks onto a prime but squeezes the small businesses profit margins by loading the prime's pass through costs onto work performed by the subcontractor. Small businesses are starting to leave the defense business because the profits are not sufficient (Fryer-Biggs, 2012). The

departure of large and small businesses from the defense marketplace because of insufficient profit margins doesn't bode well for maintaining a robust competitive environment as the nation struggles to maintain an effective military capability while reducing spending.

On-Target Contract Performance

If sellers are motivated by profit in the defense marketplace, buyers are motivated by delivery of goods and services on time, on budget, and meeting quality and performance requirements. RFPs are structured to select sellers who offer the best value to the buyer where that value is usually assessed as a combination of technical capability, price, and recent past performance. Price is often less important than technical capability and sometimes less important than past performance in scoring proposals from various bidders. Seller selection criteria, when coupled with contract type, provide a strong indication of what motivates the buyer.

Contract preference from the government is clearly with fixed-price incentive firm target (FPIF) contracts wherever appropriate. The Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]; 2010) called for using this contract type wherever possible to control costs and reward seller performance. Although this is one part of a broadly focused initiative to increase defense buying power, it establishes the business interface between sellers and buyers. The same memorandum called for the expansion of the Navy's Preferred Supplier program. Preferred suppliers are those demonstrating consistently exemplary performance, which is rewarded with special post-award terms and conditions that improve the seller's financial rewards and business environment.

Competition

All competition is not created equal. The better buying power initiative differentiates competition from directed buys or other contrived two-source arrangements that don't necessarily achieve the full impact of competition (USD[AT&L], 2010). The existence of multiple sellers in a sector of the defense marketplace may drive efficiency, productivity, and/or innovation, but only in the case where there is real competition. Buyer practices can either increase or decrease the percentage of contracts that are awarded based on real competition (USD[AT&L]). Systems bought in a competitive environment but without a full data package and intellectual property license rights are typically maintained within the defense community for decades as sole source proprietary systems. These one-and-done competitions address only cost management of approximately 30% of the total ownership cost.

The power of competition to drive cost control is dramatically illustrated by the Littoral Combat Ship (LCS) acquisition program. After the selection of two designs, the program was moving toward directed awards of the competitively awarded designs to the winning teams. Cost growth of the finished ships in both programs prompted the Navy to shift to a competitive down-select to one builder/one design with a 15 ship multi-year award to the winning builder. The RFP also asked for a complete data rights package with intellectual property license rights for the buyer to subsequently compete the winning design openly across the industry. The bid prices provided sufficient savings compared to the independent cost estimates (ICE), and the Navy was again prompted to restructure its program plan. This time, the Navy awarded 10 ship multi-year contracts to each of the two builders because the competition had driven the bids down sufficiently to get 20 ships for the money budgeted for 15 ships (O'Rourke, 2011). Future actions within the program to maintain the competitive environment remain to be designed.

Risk

Both the buyers and sellers want to minimize their risk, often at the expense of their counterpart. Every transaction includes some element of risk. Standard contract clauses routinely call out risks from forces or events outside the control of either the buyer or the seller. RFPs are structured to maximize the probability of selecting a seller who can successfully deliver the product or service. In the FAR and DFARS, contract types are separated into fixed-price type contracts and cost-reimbursement contracts. Contract type is the principle method of allocating cost risk between the government buyer and the seller (FAR, 2011, 16.103). The most prominent attribute of fixed-price incentive contracts is the allocation of risk to the seller. The use of target price, share line, and price ceiling added to the contract further motivates the seller to control cost.

From the seller's perspective, minimizing risk means bidding to deliver only what is easily attained. The seller must focus on proven methodologies, well-tested processes, trusted material sources based in long and successful relationships, and avoiding the introduction or use of unfamiliar technology, concepts, or partners. Change involves risk. There are always unforeseen impacts when a well-understood production process is tweaked and a seller carrying all the cost risk cannot afford to introduce process risk. This places significant barriers to innovation into the marketplace. However, innovation is essential to future business on the seller's part, and warfighting success on the buyer's part. Risk must be balanced between buyer and seller for the marketplace to function well. Independent Research and Development (IRAD) programs in industry provide one path to develop new processes and technologies while controlling the risk (USD[AT&L], 2010). It is in the best interest of both to succeed. That means products are delivered on time and at budget while industry makes a profit.

Future Opportunity, Future Value

Short-term gains, current market share, and current value are the principal focus of much of U.S. business (Steverman, 2010). Sellers in the defense acquisition marketplace are focused on staying in business in the short term and winning future business. The sales cycle in defense is measured in years and decades. A single ship construction contract covers five years. The design and development contracts leading up to the construction contract for DDG 1000 spanned more than 10 years. Even the design, development, and construction of the two LCS lead ships spanned seven years from the initial concept contracts to delivery of the second lead ship (O'Rourke, 2011). Engineering management support contracts are being awarded for a base year plus two or three option years. Defense companies must focus on winning the next contract; losing the next competition may exclude them from a business area for three years or longer.

Contracts are won through current performance, superior intelligence, and the assembly and maintenance of a suitable product or capability. All of these take time, investment, and a focus on a future that is three, five, 10, and more years out.

Conclusions

There are some salient points to consider when assessing the function of the defense acquisition marketplace. Some relate to the structure of the marketplace, while others concern market forces.

- Demand and public policy: The most important market force in the defense acquisition marketplace is public policy that is likely to introduce continuous churn into the demand for defense goods and services as Congress, the president, and world events change.

- Contract performance and profit: Sellers in the defense acquisition marketplace are driven by profit, but the buyer is not. The buyer is motivated to meet delivery schedules, stay within budget, and deliver the specified technical product performance. These are the things that keep the respective parties in business and keep the people they work for happy.
- Risk: Risk is the mutual enemy of both buyer and sellers. It is in their individual best interest to push risk onto the other party, but it is in their mutual best interest to eliminate as much risk as possible and equitably share whatever risk remains. Only shared risk motivates both parties to work to resolve the associated issues and keep the program on track. This applies to technical, schedule, and cost risk. Although choice of contract type and structure deals with some areas of risk distribution, others must be dealt with in program structure.
- Information flow: Elements of marketplace structure impact the ability to use the marketplace efficiently. Without open flow of information, sellers stay out of the marketplace, costs versus price becomes distorted (should cost versus will cost), and the ability to achieve the best value proposition at the least risk becomes problematic.
- Market rules: The defense acquisition marketplace has a remarkable set of formal rules and enforcement mechanisms. Although they make it possible for the market to function, they also impose some substantial transaction costs. Reducing the portions of the rules that add costs without adding value should be a continuing focus of acquisition reform.
- Trust between participants: Although a marketplace can replace trust with rules and enforcement mechanisms, it impedes the efficiency of the marketplace. The defense acquisition marketplace works best when the rules are augmented with clearly communicated expectations and consistent program execution. That approach builds trust.
- Competition: The power of real competition to improve efficiency and productivity in the marketplace is exceptional. The problem is structuring a program to establish and maintain a competitive program environment. A dichotomy of the defense acquisition marketplace is the concurrent conflicting desire on the part of the buyer to find and keep sellers who provide consistently superior goods and services. Managing to both reward consistent performers and maintain a truly competitive environment is a challenge.

Summary

The structure of the marketplace strongly impacts the ability to operate efficiently where efficiency is a measure of how effective market forces are in delivering value to the buyer and profit to the sellers. Addressing structural issues in the marketplace, such as information flow, trust between participants, and participant autonomy, can dramatically improve the effectiveness with which market forces can be used to improve the value proposition for buyer and sellers.

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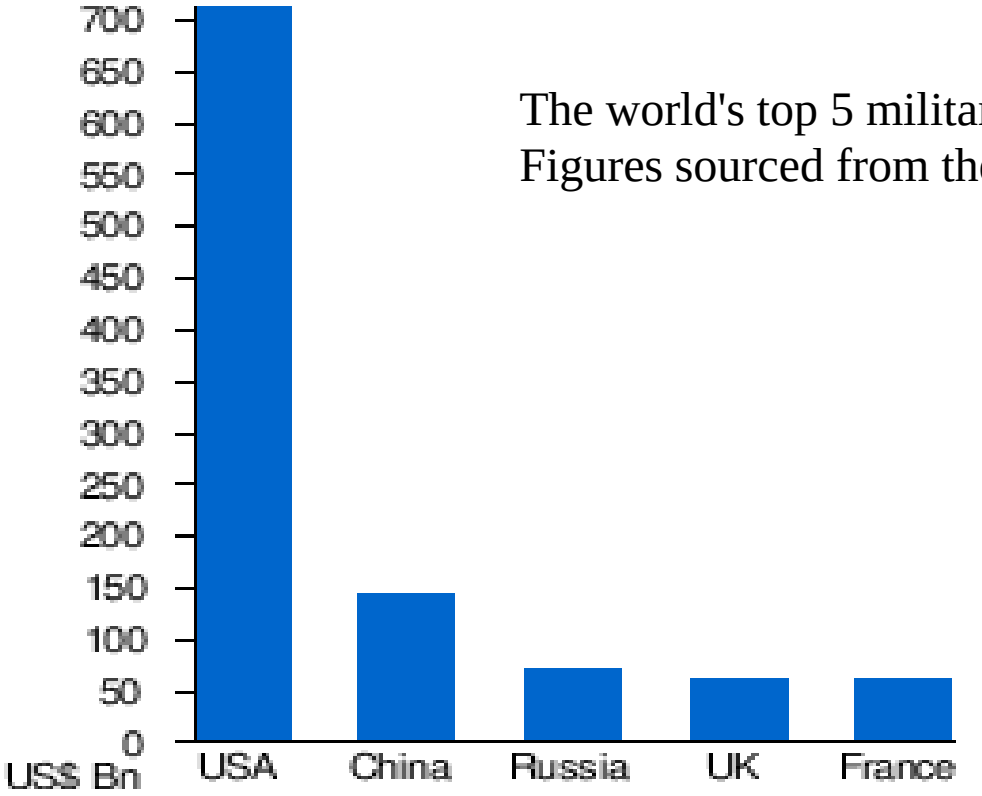
Market Forces in the Defense Marketplace

Market Forces

- Supply and Demand
  - The basic driver of all markets
- Competition
- Profit
- Market Rules and Property Protection

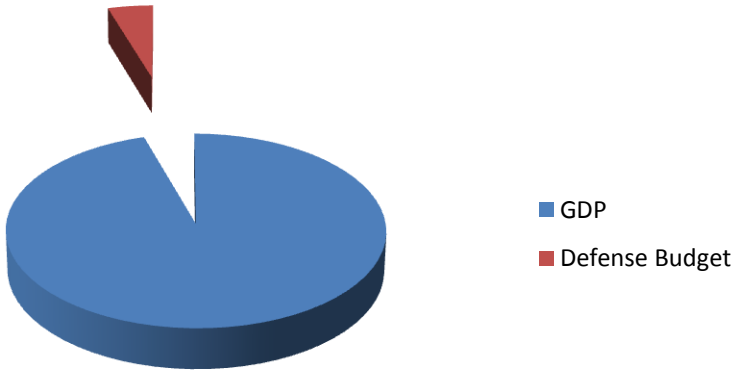
Market Size

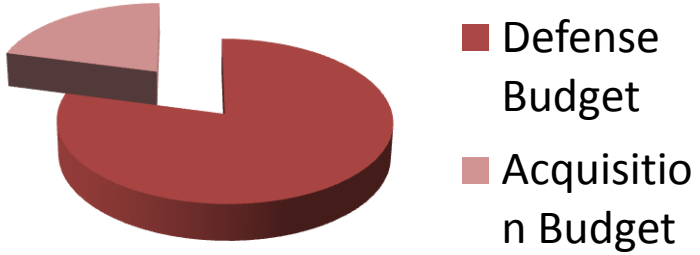


The world's top 5 military spenders in 2010.
Figures sourced from the SIPRI Yearbook 2011

Sector Size

- Comparison to US Economy





Defense Market Drivers

- Supply
  - MILSPEC vs. COTS
  - Monolithic vs. Modular
  - Proprietary vs. Open
  - Homegrown vs. Standards Based
- Demand
  - Public Policy
  - Wartime vs. Peace
  - Good Economic Times vs. Bad

Drivers

- Profit
  - An essential ingredient for suppliers
- Contract Performance
  - Cost, Schedule, and Technical
    - The Public Sector analogy to profit

Drivers

- Competition
  - Public Sectors principle tool for cost control
  - Real Competition introduces “unknowns”
- Stability
  - A known supplier performing in a predictable fashion represents stability
- Risk
  - Anything that represents unknowns in a program – Drives Public Sector Heavily

Drivers

- Market Rules
  - When one side of the trading partnership controls the rules…
- Transaction Costs
  - Those costs of doing business that add neither value to the products, profit to the vendor, or improved contract performance for the public sector

Leveraging Market Forces

- What releases the marketplace to answer the mail?
  - Freely available information
  - Real competition (actual opportunity)
  - Property rights protection
  - Trust between participants

Impact of Marketplace Structure

- How does marketplace structure impede or leverage market forces
  - Weak or unenforced property rights structures drive out innovators
  - Restraint on information (proprietary systems, limited RFP distribution) limits the opportunity to discover solutions or better approaches
  - Without real competition there is no incentive to innovate or achieve contract performance gains
  - A trust relationship fosters collaboration

Changing the Marketplace

- Moving the Marketplace toward an open model
  - Open Business Model versus Open Systems Architecture
    - Data Rights
    - Standards Based versus proprietary structures
    - Modular, loosely coupled, highly cohesive versus Monolithic
    - Real competition versus allocated contracts
    - Rewarding performance rather than longevity

Issues

- The Navy has programs that have demonstrated dramatic improvement by leveraging market forces using OSA
  - But transition to Open Market or OSA by large established programs is seen as risky at best
  - A program manager approaches professional suicide by accepting risk
  - The acquisition machinery drives programs to maintain status quo

Final Thoughts

- Moving to an Open Market model depends on Program Managers making the decision to transition and managing that transition
- It is about practicing the art of program management, not a new set of acquisition governance machinery